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November 2002

PREMIER ISSUE

NEW YORK'S READER-FRIENDLY MONTHLY COMPUTER MAGAZINE



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Jeanne A. Benas: cartoonist, illustrator, caricature artist. Since graduating from Syracuse University with a degree in advertising and illustration, diversity has characterized Ms. Benas' commercial art career. From her work as fashion illustrator, ad agency staff artist, editorial artist and art director, Ms. Benas has woven together all those skills into the fabric of her present career. Now heading up her own art studio, she specializes in cartoons, caricatures, and illustrations.

Some of Our Writers



Daniel Dern, Grant McKenzie,
Dave Taylor, Kevin Savetz

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COMPUTER CLICK MAGAZINE

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Hello World

Welcome to Computer Click Magazine, New York's new computer monthly.



I'm Kevin Savetz, the editor. I have been writing about computers and technology for a decade — my articles have appeared in mainstream publications like The Washington Post as well as magazines that only a dyed-in-the-wool computer geek could love.

This, I hope, is a magazine that you don't have to be a computer geek to love. Computers can be complicated, and computer magazines can be daunting. Computer Click Magazine will help computers make sense to everyone. You won't need a computer science degree to understand it and learn something each issue.

Computer Click aims to be a reader-friendly, non-techie publication that educates and informs, in order to help readers discover the real potential of using a computer. We want to show folks how to use their computers for their personal benefit, whether that means getting work done more quickly, e-mailing photos to family members, blasting animated space aliens, or something else entirely.

We've put together a crack team of writers who know how to make technology simple. Daniel Dern, former editor of Byte.com and Internet World magazine, shares his tips on protecting yourself when buying stuff online. Dave Taylor, author of innumerable computer books, makes sense out of the Linux operating system; and networking guru Glenn Fleishman explains how to make your computers communicate with each other, wirelessly.

I've contributed an article about a new type of modem that can make your Internet connection faster. Beka Ruse and Mariva Aviram offer tips on eliminating "spam" e-mail, to make your Internet connection more pleasant. A dose of humor, read Grant McKenzie's take on the future of so-called "smart appliances."

That's the tip of the proverbial iceberg: you'll also find product reviews, an events guide, and a list of computer users groups.

If you have comments or suggestions about Computer Click Magazine, I want to hear them. Feel free to send me your thoughts via e-mail to editor@computerclickmagazine.com.

Happy reading!

Kevin Savetz

Computer CLICK magazine

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How To Pay For Things —Safely— On The Web

By Daniel P. Dern



Once you've found something on the web you want to buy — airline tickets, somebody's used CDs on eBay, tofu chocolates from a veggie boutique you've never heard of, etc. — the next step is, of course, paying for it.

The quickest and easiest way is online, such as entering your credit card (*DON'T* use debit cards!) on a web site, or using an online payment system like eBay's PayPal, or online money orders or checks.

Alternatively, you may want to or have to pay "off-line" — phone in a credit card number, or send a money order or a check. (Never send cash!)

As a rule, most sellers will tell you

what payment options they accept. Some will accept credit cards, others prefer money orders, some require use of PayPal (the best-known online payment system.)

It's up to you to decide which method, of the ones you can do, you feel is most appropriate for each purchase. Here's some info and advice to help you decide.

Online Methods: Quick And Easy

Paying online offers instant, or at least quicker, gratification — your money gets there at the speed of electrons, rather than through the post office,

which cuts down the delay between placing the order and it being sent out. Not everyone accepts online payments, however, or you and they may not use the same online method.

Credit Cards: Safe To Use, But Consider "One-Use" Numbers

In general, credit cards — American Express, Discover, MasterCard, Visa, etc. — are your best bet in terms of protecting you against fraud or misuse of your account information. Your liability should be zero, or possibly \$50.

Similarly, if you don't get what you paid for, your credit card company should have mechanisms to allow you to

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dispute charges. (That's not the same as guaranteeing your money back, though.)

Before you use start using your credit card for any online purchases — particularly with any place other than major, well-known companies (Amazon, airlines, major catalogs, etc.,) you should check to see what your card issuer covers and what they don't. (Check their web site, or call them.)

And if you can, "dedicate one credit card just for online purchases," suggests Nancy C. Hanger (www.windhaven.com), technology writer and freelance editor. "That way, if something does go wrong and you have to cancel the card, it won't interfere with your other purchasing activities."

"One-Time Credit Card Numbers" and "Smart Cards"

One way to use your credit card without worrying about the number falling into the wrong hands is "one-time credit card numbers," also called "single-use" or "disposable" numbers.

If your credit card company offers these, each time you want to use one to make a purchase, you log onto their web site and are given a unique number which you use — once — instead of your regular account number.

It will bill to your account as if you had used your regular number — but if anybody tries to use it again, it won't work, because it can only be used once (or, in Discover's case, just at one store).

Credit card companies currently offering one-time-use numbers include American Express — Private Payments (www26.americanexpress.com/privatepayments/info_page.jsp) and Discover Cards — Single-Use Card Number (www2.discovercard.com/deskshop/internet_security.shtml).

(MasterCard and Visa may also working on these services — see if your card provider offers them.)

There should be no additional charges for these one-time numbers.

If you like the idea of one-time numbers but don't want to go through the bother each time you want to use it you may want to investigate "Blue" from American Express (home4.americanexpress.com/blue/blue_homepage_nr.asp?Entry=78). In addition to getting AmEx's "Blue Card," which contains a computer chip, you'll need a Smart Card Reader, which you plug in

to your computer.

Yet another alternative is to buy a prepaid credit card which, similar to a prepaid calling card, has an amount of money associated with it — such as the amount you plan to spend — so that there's no credit line to abuse if the information is stolen.

Online Payment Systems — Transfer Money Directly

The other leading method for paying online is online payment systems, of which PayPal (recently purchased by

One way to use your credit card without worrying about the number falling into the wrong hands is "one-time credit card numbers," also called "single-use" or "disposable" numbers.



eBay) is the best-known example.

Simply, services such as PayPal let you send and receive money online — to stores and other companies, as well as to individuals. (You can also use these services to issue paper checks through the mail.)

Once you set up an account, you typically link it either to one of your credit cards or bank accounts.

You don't have to link to something — at least, not for PayPal — but if you

don't, it'll take longer to move money in and out. (If you intend to use it primarily to receive money, such as from selling things on eBay, and can be patient about getting a check in the mail — or simply plan to spend it again, online — then that's not a problem.)

If you've done any browsing on eBay, you're probably familiar with the PayPal icon — it's the most popular service, at present.

Others include Yahoo! PayDirect (paydirect.yahoo.com), Earthlink's PayTrust (www.paytrust.com/html/promo/el.htm, CitiBank's c2it (www.c2it.com), Bank One's eMoneyMail (www.bankone.com), Western Union's MoneyZap (www.moneyzap.com), and the United States Post Office's USPS Send Money (www.usps.com/paymentservices/pspay_mnt.htm). See Goodman's Guide to Online Payment Services, at www.auctionbytes.com/paymentratings/paymentratings.html, for a summary of services.

These services can be very convenient — but use them cautiously!

In particular, think carefully before linking them to a bank account or credit card. Although they may look and act like banks, not all online payment services fall under the banking rules and regulations (PayPal doesn't, eBay Payments and Citibank's C2It do) — which means that if you do have a problem, it may be harder or take longer to resolve.

That doesn't mean you should avoid these services — just choose and use carefully. I talked to a number of friends who use PayPal, and none of them have had any problems.

But it's possible. So be sure to read e-mail from your online payment service promptly. "It could be your only warning that something is wrong," says Tom Mainelli in his July 2002 PC World article. "PayPal's Problems Customer service woes continue to plague popular payment service". (www.pcworld.com/news/article/0,aid,101525,00.asp) Also, advises Mainelli: "Don't keep large sums in your account. That way, if the service freezes your account, you're not out the cash while the problem is resolved."

Other Online Methods To Use — Or Avoid!

There are a few other methods of paying online.

- Electronic Checks: Some banks,



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credit cards and other organizations (e.g., the United States Post Office) now offer electronic checks, which come directly from your checking account. I'd be leery of using these with companies or people I don't know, though; it strikes me as better for things like paying utility bills.

- Online money orders (Western Union): Maybe useful for speed, where the seller doesn't take credit cards or online payments — but be careful, the fees for these may be 10% or more of the money you're sending, and you don't have much protection if things go awry.

- Debit Cards: DON'T USE A DEBIT CARD TO PAY FOR ONLINE PURCHASES. If your credit card number is stolen and used, you're only liable for up to the first \$50. But there's

no limit with debit cards; somebody could empty your bank account.

Offline: Money Orders, Checks... But Not Cash!

If you don't have a match on online methods, there's always paying off-line. For example, if a site won't take your credit card online — or you're nervous about doing this — consider telling it by phone. You've still got the same safety net as if you order online.

Or, print out the order, write your credit card number, and send it by fax or mail.

Another option category includes money orders, bank checks, and cashier's checks. Unlike personal checks, these don't take time to clear, and don't expose your account number.

You can get these from banks and other places. In particular, your local United States Post Office branches sell money orders, for the modest fee of eight-five cents each, for up to \$700. (You can buy more than one — up to \$10,000 per day.)

Misuse of these has the benefit of being mail fraud, a federal crime. If nothing else, the USPS maintains an online list of the serial numbers of money orders with problems.

Lastly, there's cash or stamps. "Don't send cash through the mail" is common — and good — advice. You might consider it occasionally for amounts of ten dollars or less. (Somebody recently sent me \$25 cash instead of the money order I expected.) But when in doubt, take the time and effort to send a money order.

Concluding Advice: Credit Cards Probably Your Best Bet

Given a choice, I recommend using a one-time credit card number, for the best mix of convenience and protection.

Failing that, use credit cards for known companies, possibly PayPal for sub-\$100 transactions to individuals. For off-line payments where they can't take a credit card, use a postal money order. For large purchases from individuals who aren't well known to you, consider using an escrow service.

Here's some other things to remember:

- Be sure to print out and save copies of any transaction records.
- Check your credit card statements promptly when you get them.
- If you feel nervous or uncertain about a given store or person, don't buy from them.
- DON'T use debit cards.
- DON'T send cash through the mail.

And lastly: try not to buy too much stuff you don't need.

For more advice, see Safe Online Shopping Tips from MasterCard. (www.mastercard.com/education/shoppingtips/)

Daniel P. Dern (ddern@world.std.com) is a freelance technology writer. Most recently he was Executive Editor of Byte.com. His web site is www.dern.com.



ComputerCLICK magazine

Now For Something Different!

Spam: Where it Came From, and How to Escape It

By Beka Ruse

In 1936, long before the rise of the personal computer, Hormel Foods created SPAM. In 2002, the company will produce its six billionth can of the processed food product. But that mark was passed long ago in the world of Internet spam.

Who Cooked This? (How did it all start?)

The modern meaning of the word "spam" has nothing to do with spiced ham. A skit by British comedy group Monty Python led to the word's common usage. "The Spam Skit" follows a couple struggling to order dinner from a menu consisting entirely of Hormel's canned ham.

Repetition is key to the skit's hilarity. The actors cram the word "Spam" into the 2.5 minute skit more than 104 times! This flood prompted Usenet readers to call unwanted newsgroup postings "spam." The name stuck.

Spammers soon focused on e-mail, and the terminology moved with them. Today, the word has come out of technical obscurity. Now, "spam" is the common term for "Unsolicited Commercial E-Mail", or "UCE."

Why Does Bad Spam Happen to Good People?

Chances are, you've been spammed before. Somehow, your e-mail address has found its way into the hands of a spammer, and your inbox is suffering the consequences. How does this happen? There are several possibilities.

Backstabbing Businesses

Businesses often keep lists of their customers' e-mail addresses. This is a com-



Use more than one e-mail address, and keep one "clean," for only spam-safe activities like e-mailing your friends.

pletely legitimate practice and, usually, nothing bad comes of it. Sometimes though, the temptation to make a quick buck is too great, and these lists are sold or rented to outside advertisers. The result? A lot of unsolicited e-mail, and a serious breach of trust.

Random Address Generation

Computer programs called random address generators simply "guess" e-mail addresses. Over 100 million hotmail addresses exist — how hard could it be to guess some of them? Unfortunately for many unsuspecting netizens — not too hard. Many spammers also guess at "standard" addresses, like "support@yourdomain.com", "info@yourdomain.com", and "billing@yourdomain.com."

Web Spiders

Today's most insidious list-gathering tools are web spiders. All of the major search engines spider the web, saving

information about each page. Spammers use tools that also spider the web, but save any e-mail address they come across. Your personal web page lists your e-mail address? Prepare for an onslaught!

Chat Room Harvesting

ISP's offer vastly popular chat rooms where users are known only by their screen names. Of course, spammers know that your screen name is the first part of your e-mail address. Why waste time guessing e-mail addresses when a few hours of lurking in a chat room can net a list of actively-used addresses?

The Poor Man's Bad Marketing Idea

It didn't work for the phone companies, and it won't work for e-mail marketers. But, some spammers still keep their own friends-and-family-style e-mail lists. Compiled from the addresses of other known spammers, and people or businesses that the owner has come across in the past, these lists are still illegitimate. Why? Only you can give someone permission to send you e-mail. A friend-of-a-friend's permission won't cut it.

Stop The Flood to Your Inbox

Already drowning in spam? Try using your e-mail client's filters — many provide a way to block specific e-mail addresses. Each time you're spammed, block the sender's address. Spammers skip from address to address, and you may be on many lists, but this method will at least slow the flow.

Also, use more than one e-mail

address, and keep one "clean." Many netizens find that this technique turns the spam flood into a trickle. Use one address for only spam-safe activities like e-mailing your friends, or signing on with trustworthy businesses. Never use your clean address on the web! Get a free address to use on the web and in chat rooms.

If nothing else helps, consider changing screen names, or opening an entirely new e-mail account. When you do, you'll start with a clean, spam-free slate. This time, protect your e-mail address!

Stay Off Spammed Lists in the Future

Want to surf the web without getting sucked into the spam-flood? Prevention is your best policy. Don't use an easy-to-guess e-mail address. Keep your address clean by not using it for spam-centric activities. Don't post it on any web pages, and don't use it in chat rooms or newsgroups.

Before giving your clean e-mail address to a business, check the company out. Are sections of its user agreement dedicated to anti-spam rules? Does a privacy policy explain exactly what will be done with your address? The most considerate companies also post an anti-spam policy written in plain English, so you can be absolutely sure of what you're getting into.

Think You're Not a Spammer? Be Sure

Many a first-time marketer has inadvertently spammed his audience. The first several hundred complaints and some nasty phone messages usually

stop him in his tracks. But by then, the spammer may be faced with cleanup bills from his ISP, and a bad reputation that is not easy to overcome.

The best way to avoid this situation is to have a clear understanding of what spam is: If anyone who receives your mass e-mails did not specifically ask to hear from you, then you are spamming them.

Stick with your gut. Don't buy a million addresses for \$10, no matter how much the seller swears by them! If something sounds fishy, just say no. You'll save yourself a lot in the end.

The Final Blow

The online world is turning the tide on spam. In the end, people will stop sending spam because it stops working. Do your part: never buy from a spammer. When your business seeks out technology companies with which to work, only choose those with a staunch anti-spam stance.

Spam has a long history in both the food and e-mail sectors. This year, Hormel Foods opened a real-world museum dedicated to SPAM. While the museum does feature the Monty Python Spam Skit, there's no word yet on an unsolicited commercial e-mail exhibit. But, if all upstanding netizens work together, Hormel's ham in a can will far outlive the Internet plague that is unsolicited commercial e-mail.

Beka Ruse fights spam as the Business Development Manager at AWeber Communications. Ad tracking, live stats, and a strict anti-spam policy: Automated E-Mail Follow Up From AWeber. <http://www.aweber.com/lsp.htm>



Talking Appliances Stop The Madness Before It's Too Late

By Grant McKenzie

OK, I admit it. It's all my fault.

As a member of the chromosomally-challenged XY sect, I understand that everything wrong in the world can be thrown in my face like a rancid cream pie. For that, and on behalf of men everywhere, I apologize.

However, I must insist that inventors around the world quit making it so easy for males to be reminded of their domestic deficiencies on a daily basis.

The latest offender is Electrolux — that wonderful company that wants to trick us into thinking that washing clothes is actually fun. Electrolux has decided that men, being as dumb as we are, just aren't being nagged enough. How else can they explain the fact that as soon as a woman leaves the room, any words of wisdom they have imparted to their mates about household chores evaporates in the air before it can be properly lodged in the part of the brain all men leave vacant for just such instructions.

And if the message isn't securely delivered to this unique part of the male brain, surely we can't be blamed for not understanding a word of what our mates just told us.

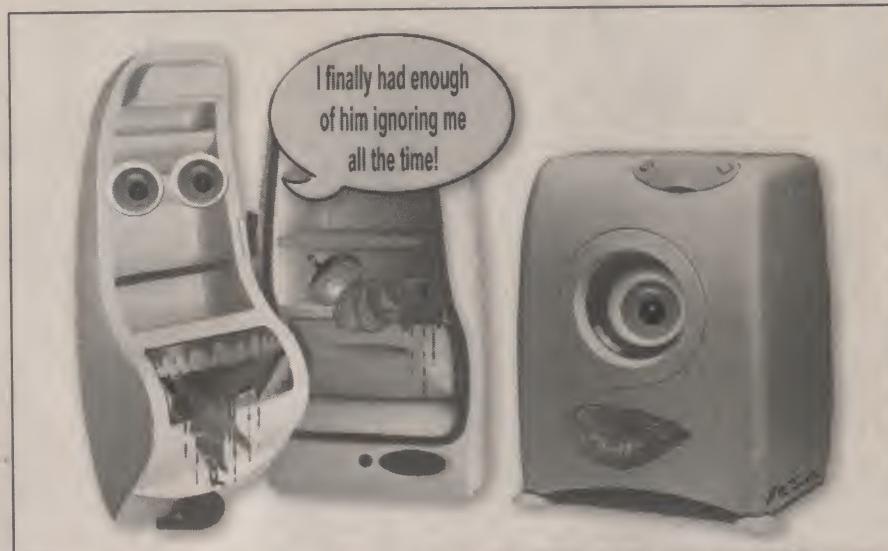
To solve this dilemma, Electrolux (which from now on will be referred to unbiasedly as Evil Electrolux) has invented a talking washing machine.

The Electrolux Kelvinator, which will be launched in India, has a vocabulary of more than 90 phrases. It says things like "drop the detergent" and "close the lid" in a soft, female voice.

Naturally, once this product is available in North America, the first upgrade will be a change in the voice. Men will never respond to a soft female voice telling them to do laundry unless it's Halle Berry and the reward is something more than clean socks.

Instead, expect our washing machines to shriek at us in the voice of self-proclaimed domestic goddess and comedian Roseanne Barr. Roseanne has a voice that can make most men beg for mercy.

The second upgrade will be better rewards. Electrolux seems to believe that a congratulatory tinkling of piano keys or a trumpet fanfare will make us feel good



about doing a bothersome chore. Obviously, they never actually talked to human beings before jumping to this ridiculous conclusion.

If we're going to waste a sunny day doing laundry, we need big rewards. To get the most work out of us, the reward should tease us. Perhaps when we first put in the laundry, a monitor will show us the beginning of a John Wayne western or a Playboy Spring Break video. When we add the fabric softener, we get to watch a little bit more, and so on until all the laundry is done. Or, at the very least, give us gumballs. You would be surprised what a man will do for a decent gumball.

Naturally, Evil Electrolux hopes the success of their talking Kelvinator will spark the demand for other talking appliances. They are already working on a fridge to tell people when food is past its sell-by date, and a stove with an electronic nose, which learns over time how people like their food cooked.

This sounds fine in theory, but you know it's going to become a giant pain in the neck when the fridge tells you for the

hundredth time that the salad dressing expired two months ago, and the stove reminds you that once again a three-minute egg should not be boiled for half an hour.

It started with that annoying buzzer inside your car that starts harping before you even have a chance to put on your seatbelt, and now it's escalating to the point where men will have to return to the fur-lined caves of their ancestors just to earn a little peace and quiet.

"If we're going to waste a sunny day doing laundry, we need big rewards. A John Wayne western or a Playboy Spring Break video. Or, at the very least, gumballs."

It will become a battle of wills between man and machine. How long until the squeaky-voiced little runt of a computer can't stand the smell of sour milk plugging its olfactory receptor and blows a fiery circuit or two? How long until the stove can't stand the grime and grease that coats its innards and decides to download a virus to end its misery?

It will be a challenge, guys, but I think we owe the world, and the generations of men to follow, to stop this madness before it begins.

Are you with me?

Grant McKenzie can be contacted at grant@mckenzieink.ca or visit his website at www.mckenzieink.ca



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Put Down That Drill! Network Your Computers Wirelessly

By Glenn Fleishman

If you have two or more computers in your house, it makes sense to network them, so you can share a printer, move files between them, or play networked games. Whether the computers are located in the same room or in separate corners of the house, a wireless network is an easy way to get them talking.

When you start tinkering with a home computer network, you may develop an unhealthy interest in what lies within your walls and the spaces between floors and ceilings.

Like an ancient mariner casting a harpoon trailing a line again and again into the depths, you roam the hallways with a long drill bit, a floor plan, and a stud finder, trying to spread wire from room to room, and floor to floor. All you find are murky innards as obscure as that famous label on ancient maps: "There Be Dragons Here."

You might have more practical concerns, too: perhaps you don't want holes, period; you have an historic home; or your walls contain exotic (or even toxic but inert) materials that can't be drilled through. More prosaically, you might be renting, barred from dowsing in the walls.

Fortunately, there's an ever-cheaper way to forego rigging your house with wires like a ship's sails: go wireless. The three-year-old Wi-Fi wireless network standard is cheap, simple, and widely available.

Best of it, unlike previous generations of wireless computer equipment (such as infrared), this standard works. Wi-Fi can carry as much data as an

What's Wi-Fi?

Wi-Fi is short for wireless fidelity, and is the trade name for the engineering standard known more formally and obscurely as IEEE 802.11b. The Wi-Fi symbol is a guarantee that a given device has met the standards to work with any other Wi-Fi labeled equipment.

average wired network, making it an attractive alternative to stringing cables, and, better yet, it requires much less expertise than pulling your own Ethernet.

Why Wi-Fi?

The native advantage of Wi-Fi over wired networks is threefold: First, it's simple to install. Install the software that came with the adapter (which may not even be needed). Shut down. Install the adapter. Start up. Select a wireless network and enter a password, if any. And that's it.

Second, Wi-Fi is flexible. You want to move your desktop computer from one side of the room to another? No problem. Upstairs or downstairs? Fine by us. Out to the back patio with your laptop? Okey-doke. Wi-Fi's range



spans dozens to hundreds of feet indoors, depending on obstacles and what's in your walls and floors. It can run thousands of feet outdoors by line-of-sight; some community networks have spanned 20 to 30 miles point to point with inexpensive antennas.

Third, it's cheap. Cheap is relative, of course, but when you compare it to wire, crimpers, drill bits, conduit, aggravation, holes in the walls, and the time necessary to install a wired network, Wi-Fi makes a good run for the money. With Wi-Fi, three computers and a printer could cost between \$300 and \$450 to fully equip.

What Wi-Fi Works With

Microsoft built support for Wi-Fi directly into Windows XP; Apple has sold the same technology under a different name, AirPort, since mid-1999, and has software built into Mac OS 9 and X.

Wi-Fi works with most other modern operating systems and devices, too, including Windows 98 and later, Mac OS 8.6 and later, recent versions of standard Linux and Unix desktop and server distributions, and even Palm, Handspring, and Pocket PC handhelds.

Adding Wi-Fi to a computer costs from \$50 to \$150, depending on

whether you need a PC Card (for laptops), PCI Card (for desktops), or a USB converter (for machines without slots).

Adapters for handheld computers cost somewhat more, from \$150 to \$300, and currently chew up battery life. (Newer handheld adapters are just starting to appear in the tiny, low-power Compact Flash and Secure Digital card formats.)

You also need a central hub, called a base station or access point (AP) to act as the traffic cop for a wireless network. The AP typically plugs into a broadband cable or DSL modem's Ethernet port or into a phone line for dial-up. APs cost from \$100 to \$300 for consumer models, depending on features. (You can turn a computer with a Wi-Fi card into a base station, but without a machine that you leave on all the time, the right soft-

Wi-Fi is flexible. You want to move your desktop computer from one side of the room to another? No problem. Upstairs or downstairs? Fine by us. Out to the back patio with your laptop? Okey-doke.

ware package, and a better antenna, it's not worth the additional complications.)

You can easily find a dozen makers of Wi-Fi gear at any online computer retailer, and typically a few major brands at computer superstores. Cisco, 3Com, and Agere tend to make business-grade equipment that can cost near \$1,000 for the AP alone.

However, offers a superb second-tier of manufacturers offer consumer Wi-Fi devices, including Buffalo Networks, D-Link, Linksys, and SMC Networks. Apple also has cards that fit into a special slot in all current Macs (\$100) and a Mac-oriented AP — AirPort — that works fine with other platforms (\$300).

Because all Wi-Fi-branded equip-

Radio Waves

Wi-Fi uses part of the radio spectrum—the 2.4 gigahertz (GHz) industrial/scientific/medical (ISM) band—reserved by the Federal Communication Commission (FCC) for unlicensed use.

This means that although the equipment you purchase has been approved by the FCC (and its regulatory counterparts if you're outside the U.S.), you don't need a license to operate it, nor are you assured of exclusive use of the band.

Wi-Fi uses a transmission technique called spread spectrum in which it broadcasts over a swath of different frequencies at different times. The standard was designed to offer three clear channels that don't overlap so that you can cover a wider area by overlapping the signals. This is especially popular in dense urban areas or offices.

As signal strength weakens or interference increases, Wi-Fi can drop down to three slower speeds and continue sending and receiving data: 5.5, 2, and 1 Mbps. The slower two speeds also work with older equipment that predates Wi-Fi, but isn't widely used.

Outside the U.S., different countries have approved different parts of the 2.4 GHz band for unlicensed use, so some channels allowed in the U.S. are illegal elsewhere (and vice-versa). Access points bought in the U.S. might require software changes to work elsewhere. Client adapters—PC and PCI Cards, for instance—tune into whichever channels are in use, so they can almost always be used worldwide.

Buying an Access Point

The features you might want in an access point include:

- firewall/NAT (network address translation): A firewall can block access to your machines from the rest of the Internet, protecting them from remote attacks. Some firewalls are sophisticated, monitoring traffic for patterns. Most simply make your machines invisible by assigning them fake but functioning local network addresses which the AP translates back and forth to the wider world.

- Ethernet ports: many APs have one or more wired Ethernet ports built in. This allows you to connect any wired devices, such as a printer or an existing network, into the AP and use it as a wired network hub as well.

- modem or serial connector. If you have a dial-up connection, you may want to invest in an AP that has a built-in modem or has a serial connector to attach a dial-up or even ISDN modem. You're sharing a limited amount of bandwidth when dialing up, but it's still

better than yelling around the house to see if the phone line's free. Apple's AirPort Base Station can even let wireless Mac users dial America Online.

- WAN port. The WAN port lets you plug a cable or DSL modem in and relay all its traffic through. This is useful if you're using an AP's firewall features.

- cable/DSL modem support: some Internet service providers require special kinds of log-in or identification, often called PPPoE (PPP over Ethernet), DHCP Client ID, or MAC address. (That last refers to a unique Ethernet number, not a Macintosh computer.)

- print spooler: if you have a printer with a parallel port, some APs can spool printer traffic from wired or wireless computers directly to the printer. (This typically works only with Windows machines, however.)

There are a host of other particulars, too, which you can check into, including AppleTalk support for Macintosh computers, or how many simultaneous users an access point can handle.

ment works together, you can pick and choose among companies to find the best combination of price and features. Read online reviews at retailers and recommendation sites for experiences with individual models; some firms sell dozens of similar pieces of Wi-Fi gear.

Site Survey

If at all possible, borrow a laptop with a Wi-Fi card and an access point. Place the AP in several locations in your house, although you may not have a choice if you already have a broadband connection wired in. Most Wi-Fi cards

come with software that allows you to monitor or even chart signal strength.

The following problems might arise as you survey your home.

Distance. Because Wi-Fi sends signals wirelessly and at a high frequency, it can pass through most interior dividers (walls, floors, and windows) as if they don't exist. But there are limits to the distance signals can carry. If you absolutely want to use a laptop in the backyard or a loft, check that the signal reaches there.

Jim Thompson, a veteran Wi-Fi expert, pointed out that brick walls might be a problem, but not because of their thickness. "Brick can hold a lot of water," and because Wi-Fi operates at the natural resonance frequency of water, the signal can be absorbed.

Metal in the walls. If you have plaster walls, check to see if the plaster is supported by a wire mesh. Also, other metal conduits or sheathing in the walls or other interior house partitions may shield the signal from passing through.

Microwave ovens. Microwave ovens coincidentally spew interface in the 2.4 GHz band on which Wi-Fi operates because they vibrate water molecules. When microwave ovens are in use, you may have network slowdowns or outages.

Cordless phones. Newer cordless phones operate at 2.4 GHz as well, and these phones are not well-behaved. Their signals travel back and forth across the band, and can reduce the network's effective speed.

Competing standards. Two related technologies, HomeRF and Bluetooth also use the same radio band; if you're using HomeRF, you can't easily use Wi-Fi in the same space. With Bluetooth, the story is different. Bluetooth uses very small amounts of power and its signals run only 30 feet or so in current versions. Operating Wi-Fi and Bluetooth devices next to each other can reduce network speed. Future versions of Wi-Fi, Bluetooth, and HomeRF are being designed to co-exist without trampling each other.

Wired machines. If you still have some machines that can only use wired Ethernet, make sure the AP is close enough to them that you don't have to drill extra holes or run miles of cable.

HomeRF

You may have heard of another wireless networking technology called HomeRF. HomeRF uses the 2.4 GHz band just like Wi-Fi, but the standard is squarely aimed at the home and has had a slow start due to late approval from the FCC for a faster version that closely matches Wi-Fi's speed.

Wi-Fi has built up momentum due to rapid drop in price during 2001—prices fell for most equipment by 50% to 75%—while HomeRF's fast version just started appearing in electronics stores last summer.

If you expect to use a laptop or other portable device, Wi-Fi is the only way to go. Business, free community networks, and public space commercial providers in Starbucks, airports, and conference centers have all standardized on Wi-Fi.

The advice in this article about surveying a site applies equally well to HomeRF, however, because it uses the same part of the electromagnetic spectrum.

Bigger Homes

If a single access point can't reach all the parts of your house, you might think about installing two or more. You have to connect those APs, and that typically involves running a length of Ethernet wire between them, although more and more equipment is appearing that lets you wirelessly connect separate APs.

The Linksys WAP11, for instance, can be configured as a wireless bridge: using a pair of them, each connected to yet other APs, and you can connect two networks at a large distance seamlessly.

When microwave ovens or cordless phones are in use, you may have network slowdowns or outages.

You're Not Alone

If you live in even a most moderately dense urban or suburban neighborhood, you'll probably get a surprise after you install your Wi-Fi network: when you use the selection tool when setting up a Wi-Fi adapter, other networks appear in the menu. Yes, your neighbors have probably already beaten you to it. A few months ago, new neighbors moved in next door, and the name "tsunami" suddenly started to appear in my list of available networks.

It's not nice to connect to other people's networks without their permission, but a growing loosely affiliated movement to build free community networks may pique your interest. Visit <http://www.bawug.org> for resources

and links to community groups, or consult Building Wireless Community Networks (O'Reilly and Associates, 2002; ISBN 0596002041) by Rob Flickenger.

Set-Up and Go Wireless

With the site survey complete, you can purchase your equipment, install your adapters, and set up the network. Right out of the box, most home and business equipment is configured exactly as needed. It's true plug and play. The most you should need to set is a name and a network password, which the product manuals, remarkably enough, will walk you through.

With your devices up and running, you'll be amazed at how little time you spend coping with network. Wi-Fi turns a network from a snake-like mess of cables and adapters into your water service: you can always turn on the tap, and bandwidth just flows out.

Glenn Fleishman is a freelance technology journalist who contributes regularly to The New York Times and The Seattle Times. He tracks Wi-Fi news and writes analysis and reviews at 80211b.weblogger.com.

USB Instant DVD

By Grant McKenzie

I reluctantly ventured into the arena of camcorders nine years ago when my daughter was born. I wasn't really a fan of the media as I preferred still photography, but everyone insisted that a video diary of her growing years was essential to universal happiness.

I relented, somewhat, by renting or borrowing a camcorder to record each of my daughter's birthdays. Unfortunately, I've found that videotape isn't designed to last. On those early tapes, the picture and sound quality is already starting to fade, crackle and pop.

I began to explore how I could preserve and enhance my small collection of videotaped birthdays. The solution was surprisingly easier than I expected.

USB Instant DVD from ADS Technologies doesn't look like much. Sure, it's cute, barely the size of a videocassette, and comes with enough ports and connectors to quicken your pulse, but my first reaction was that it seemed too light and too small to do what it claimed.

Fortunately, looks are deceiving because it took me less than five minutes to connect the device to the USB port of my computer, install the software and hook up my VCR. The instructions were clear and each connector clearly marked.

Once I was hooked up, I simply hit play on my VCR and record on my computer. Utilizing hardware-based MPEG-2 compression (the same format used in DVD movies), USB Instant DVD began to capture smooth, full-screen video and stereo sound in real time.

The device comes with a great software package, including VideoStudio 6.0, DVD PictureShow and MyDVD 3.5. Using this software, you can choose a simple one-step process of capturing the video and burning it directly to CD or DVD, or you can get creative in VideoStudio and begin to edit your movies.

I know the idea of editing your own movies sounds intimidating, but I was surprised at how easy and fun it was. I began by breaking my first video into



USB Instant DVD

manageable clips. Basically, whenever the action switched (say from the kitchen to the living room, or from the clown to the cake), I stopped recording and saved the clip. Then I would simply begin recording again to get the next clip.

Once you have all your clips, VideoStudio allows you to easily add graphics, text, music and cool transition effects. For the video of my daughter's first birthday, I added semi-transparent splash screens that announced when special guests, such as grandparents, arrived. Also, with a simple click and drag of the mouse, I added 3-D transitions between the clips that just gave the video a cool look.

If you want to get really fancy, you can even add special filter effects and scrolling credits. I can't guarantee that it will turn you into the next Spielberg, but a funky transition effect is better than jittery footage of the carpet as you tried to find the pause button.

Once you've completed your movie, you can select to burn it onto DVD or CD (if you have the proper hardware), or you can transfer it back to videotape. For smaller clips, you can even create streaming video for Internet broadcasts.

Not having a DVD burner, I chose to burn my movies onto CD using the VCD format. VCDs can be played on most stand-alone DVD players and

computers with either a CD or DVD drive. You can record approximately 60 minutes of video on a blank CD.

USB Instant DVD retails for \$229 from ADS Technologies at www.adstech.com.

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Zip 750

By Kevin Savetz

Iomega has released a new version of its Zip drive, which can store 750MB on each removable disk — three times the capacity of the previous version — and is considerably faster than earlier models. But at less than an inch high and four inches long, it hasn't gained much size in the bargain.

Accessing all that capacity (717 megabytes, according to Windows) would take too long over regular USB cables, so the Zip 750 uses the new USB 2.0 standard to speed up data transfers. Your PC will need a motherboard or upgrade card that supports USB 2.0. If your computer uses the older USB 1.1 protocol, the Zip 750 will work, although data moves at a much slower pace. In our tests, a USB 2.0-equipped PC read 685MB of data off the disk in about 4 1/2 minutes, vs. 15 1/2 minutes over a USB 1.1 connection. Write speeds didn't show quite the



same improvement: The drive took about 14 1/2 minutes to write 685 megs of data over USB 2.0, against roughly 24 minutes with the slower connection.

A FireWire version, compatible with any new Mac and some PCs, runs for \$200, and Iomega says it will release an internal version of the drive soon.

If you already use a Zip drive, your old disks may work in the new drive. 250MB Zip disks work fine. The new drive can

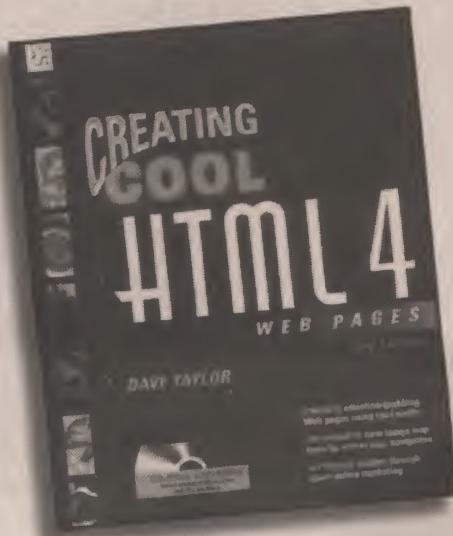
read from, but can't write to, 100MB disks, which considerably reduces the usefulness of that older media.

This attractive little gadget's competition, however, isn't other Zip hardware — it's near-ubiquitous CD-RW drives. How do they compare? Zip 750 disks hold slightly more information than CDs, their contents are easier to edit and erase, and unlike CDs, they can't be ruined by a simple scratch. But recordable CDs, sold for as little as a few pennies per CD-R and \$1 or so for a blank CD-RW, cost a lot less than Zip disks, which go for \$9 in the 250MB size and \$11 to \$15 in the new 750MB format.

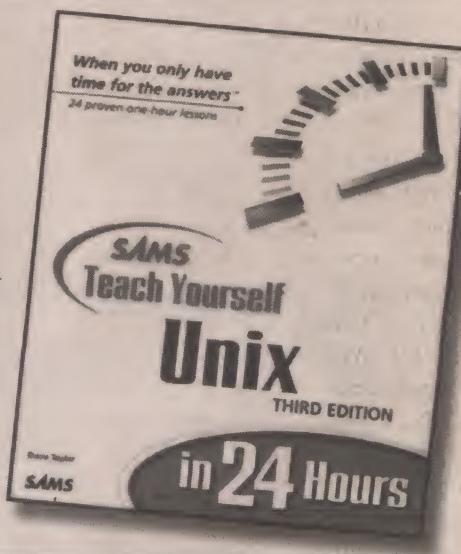
The Zip 750 drive is sleek, fast and portable, but CD-RW may be a better bet.

The Zip 750 has a retail price of \$180 and requires Win98 or newer, or Mac OS 8.6 or newer.

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Modems Get Spiffy New Features

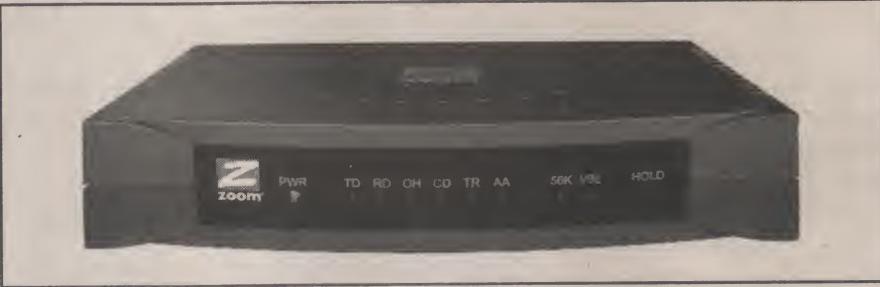
By Kevin Savetz

If you use an analog modem to connect to the Internet, you need all the speed you can get. Despite the ever-growing availability of cable modems, DSL, and other broadband options, almost 80 percent of U.S. Internet users still use 56-kbps modems that download 50 kbps on a good day.

A new modem standard, called V.92, is beginning to make Internet connections for modem users faster and more convenient. Although modems that utilize V.92 have been on the market for more than a year, its adoption by Internet service providers has been slow. Just buying a V.92 modem isn't enough — to use its additional features, your ISP must also upgrade its hardware. None of the nation's large ISPs have committed to doing so — however, local and regional ISPs have been faster to join the bandwagon.

"We are working with at least 50 local and regional ISPs that have deployed V.92 service across the country. But that is a drop in the bucket until one of nationals decides to promote it," said Larry Hancock, marketing director at Zoom Telephonics, a major modem manufacturer.

America Online, Earthlink, MSN, and AT&T WorldNet have not made any announcements regarding support for V.92, although all of the companies are conducting tests of the service. Despite the lack of official support, many users have discovered unofficial V.92 access numbers across the country, as ISPs' backbone providers quietly



upgrade their hardware. "We constantly get calls from customers that are using V.92 on AOL," Hancock said. (The Web site Modemsite.com lists ISPs that support V.92 calls.)

Customers' favorite feature is modem on-hold. Everyone wants more speed but modem on-hold saves money.

More Speed, New Features

When used with a compatible ISP, V.92 modems add four major features:

- "Modem on-hold" (also known as "Internet call waiting") will be cause for celebration in one-phone-line households. The feature works with the phone company's call waiting feature, allowing you to answer an incoming call when you're online. After you hang up, you can resume with the Internet

connection unperturbed.

- "Quick connect" will reduce the time it takes to log in, cutting by half the "training" time in which the modems squeal and beep at each other to establish a connection. The first time your computer connects to your Internet provider, the modem memorizes information about the connection. For subsequent connections, the modem can log in more quickly by relying on what it learned about connecting to that ISP. It's not a dramatic improvement, but will save a few seconds every time you log on.

- Improved compression for faster downloads. Although the new modems have the same maximum download speed as older modems, they use a new compression protocol called V.44 that will make text and HTML download somewhat faster.

- Faster uploads. A technology called "PCM upstream" digitally encodes data that the modem sends, increasing upload speeds to 48K per second. (Today's modems are limited to 33.6K per second.) This will improve the

The mysterious V.whatever naming convention — and the underlying modem protocols — originates in Switzerland, at the International Telecommunications Union, (www.itu.int) an organization that coordinates telecommunications networks and services. Protocols that start with "V." are standards for data communication over the telephone network.

speed of online games, video conferencing, and file uploads.

"V.92 has not yet made it to the masses of the end consumer," said Mark Bayliss, owner of Visual Link Internet, a Virginia-based ISP. Bayliss estimates that about five percent of Visual Link's customers have switched to V.92 since the company began offering the service three months ago. He expects V.92 to become popular quickly, with close to 90% adoption within a year.

Customers' favorite feature is modem on-hold, he said. "Everyone wants more speed but modem on-hold saves them money because they don't have to pay for a second phone line. Customers who had added a data-only line can drop back to a single line, saving about \$25 a month."

Taking A Test Drive

"In speed testing we have been thoroughly impressed with V.92 — connection rates have been far superior to V.90," he said. "Customers who were spending money on ISDN lines are seeing about the same performance with V.92. It's blurring the line of where broadband is. It is definitely going to stretch the lifespan of modems for a long time."

We tested two V.92 modems — Zoom model 3049 (www.zoom.com) and U.S. Robotics model 5868 (www.usr.com) — and compared them to a 56K modem using the older V.90 protocol. The two V.92 modems downloaded Web pages more quickly — in part due to improved compression, but also because the V.92 modems were able to connect at faster speeds than the older modem. V.92

seems to better tolerate the eccentricities of phone lines.

Large, text-heavy Web pages typically appeared four to five seconds sooner with the V.92 modem, but there was little difference on graphics-heavy pages. Surfing didn't approach the speed of a cable modem, but was certainly sprightlier than with the older

You may not have to buy a new modem to enjoy the newest features. A free upgrade may be available from the manufacturer.

modem.

Modem on-hold popped up an alert window when another call came in (you'll need call waiting and the right software for this to work.) With caller ID, you'll also see the caller's number. If you take the call, you can talk from 30 seconds to 16 minutes, depending on how long your ISP lets you put it on hold.

Because we were testing over a long-distance connection, the quick connect feature did not work in our tests. It requires a local ISP connection, which most Internet users have.

Will This Be Your Last Modem?

Replacing your current, working 56K modem with a V.92 model would be premature, unless your ISP has already upgraded its hardware and you need

Internet on-hold or every possible bit of speed. If you plan on purchasing a new modem anyway, it makes sense to buy a V.92-ready model now. It will work with today's V.90 standard. Then, when your Internet provider is ready with V.92, you'll have the hardware.

You may not have to buy a new modem to enjoy the newest features. Some modem manufacturers have released "flash upgrades" that will update certain models to support V.92. (A "flash upgrade" is a simple process that updates a modem's internal software, or firmware.) But most older modems aren't upgradeable, lacking the hardware power to handle the enhanced compression and call waiting features. Visit your modem manufacturer's Web site to find out if an upgrade will be available for your modem.

With the ever-increasing demand for high-speed Internet access and the decreasing cost of broadband services such as cable modems and DSL, analog modems may be living their twilight years. V.92 could be the last great modem standard.

On the other hand, not everyone is ready to abandon the good old analog modem. Unlike DSL and cable, modems rely on common, inexpensive telephone lines. DSL requires you to live near the phone company's central office, and many cable television providers do not offer Internet access. In comparison, modem-based access is boring and unsexy — but also cheaper, simpler, and a good deal more reliable.

Kevin Savetz, editor of Computer Click, has been a technology journalist for a decade. His web site is www.savetz.com.



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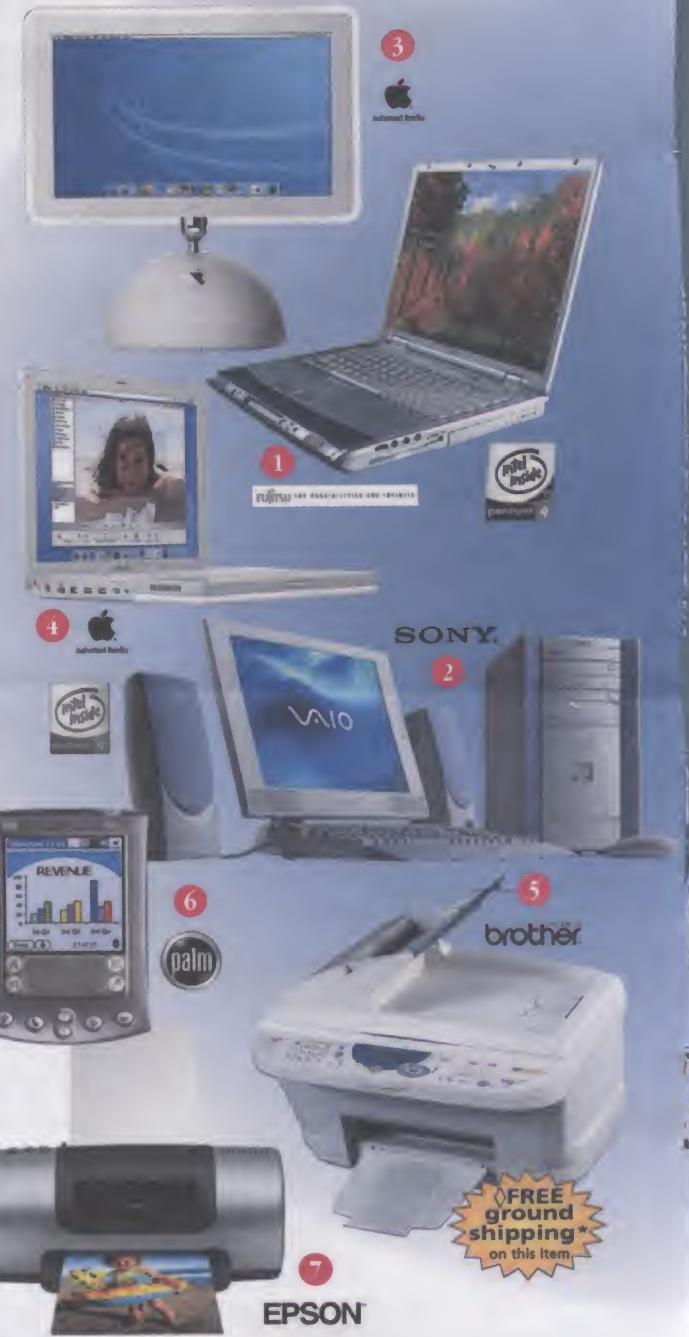
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Jaguar: You Can't Fight The Kitty

By Kevin Savetz

It really doesn't matter whether or not you like MacOs X, because — for better or for worse — it's here to stay. Beginning in January, all new Macs that Apple sells will only boot into OS X. They won't be able to boot directly into MacOs 9 (now affectionately known as "Classic").

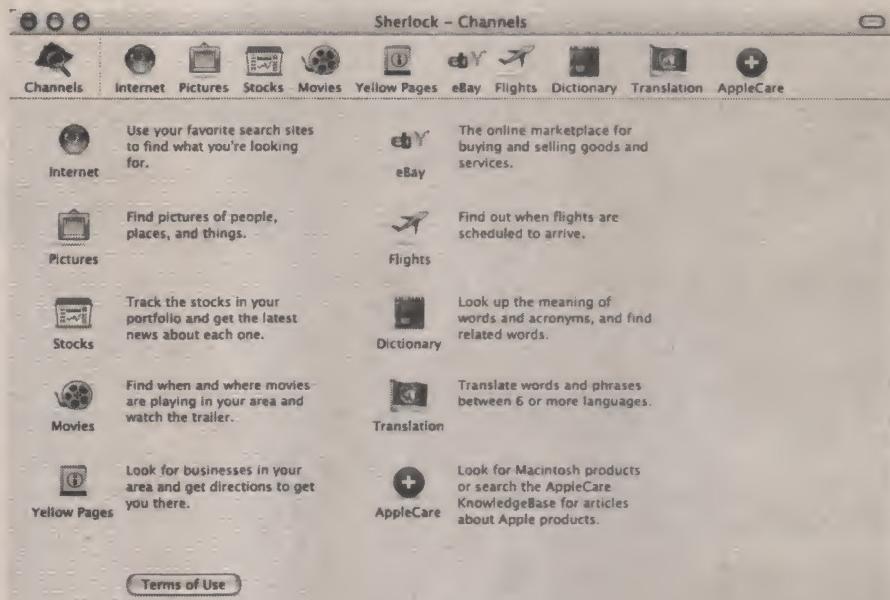
Five minutes after Apple makes this change, enterprising hackers devoted to OS 9 will certainly devise a work-around, but it doesn't matter — its fate is sealed. OS X is the wave of the future. Although some people will complain about having OS X forced down their throats, it really is a much better operating system than the old Arabic-numbered MacOs.

The first version of OS X was strictly for early adopters: it was slow and buggy, and very little software supported its new features. A few months later, Apple released version 10.1, a free maintenance upgrade that fixed many of those issues. With 10.1, OS X became truly usable. In many ways, it was much more powerful than Classic MacOs, but it was lacking in other ways, missing features that OS 9 users were accustomed to.

The latest incarnation of OS X — version 10.2, also known as Jaguar — is, for many, the release that puts OS X officially on the map. Apple has cleaned up many of the lingering problems of earlier versions, added a ton of new features, and generally made OS X ready for prime time. Apple says there are more than 150 new features. Here are some of the biggies:

- An updated version of the built-in e-mail program includes a great spam filter, supports multiple in-boxes, and adds an integrated address book that's available to all your other programs.

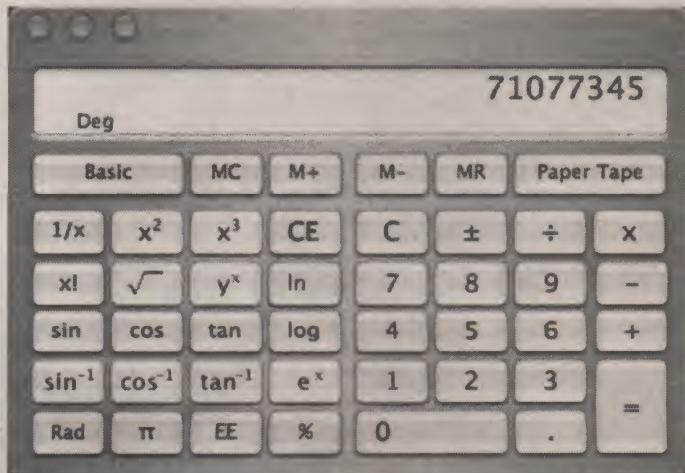
- iChat is a program for sending instant messages. Compatible with the popular AOL Instant Messenger software, it lets you chat with America



Sherlock is a convenient tool for grabbing information from the Internet without using a web browser.

Online members even if you aren't one. There are free programs from other companies that do the same thing, but iChat has a sleekness the others lack.

- Jaguar adds features for disabled users, including screen magnification, the ability to have text read aloud, and features for folks who can't easily use a keyboard.
- Sherlock 3 lets you get all sorts of



Say goodbye to the boring four-function calculator of MacOs past — and say hello to Jaguar's calc.

information — maps, dictionary definitions, stock news, yellow pages listings, and so on — from the Internet without using your Web browser.

- Spring-loaded folders, a useful navigation feature from MacOS Classic, are back. The Finder has lots of other little tweaks, too: it makes it easier than ever to search for files, and is faster than previous versions of MacOS X (but not as fast as OS 9.)

- The personal firewall feature keeps your Mac safer from crackers when you're online — especially useful for people with cable modems or DSL connections.

- Several new networking features make working with other computers and peripherals easier. Rendezvous is a behind-the-scenes technology that lets your Mac talk to other gadgets (such as printers and other computers) on a network without fussing with configuration. You can also share files with Windows PCs on a local area network. Sweet stuff if you have more than one computer in your home or office.

- Quartz Extreme speeds up graphics processing if you have a snazzy newer Mac with the right type of video card. Unfortunately, my older 400 MHz PowerMac G4 isn't so blessed.

- Apple doesn't even mention it, but I love Jaguar's spiffy new calculator. Hey, you gotta enjoy the little things in life...

Jaguar isn't perfect: since I upgraded from 10.1 to Jaguar, Microsoft Word took on the unseemly habit of crashing at random intervals. Users at Macintosh.com (a great Mac news site) have complained of a smattering of other problems, such as networking difficulties and problems with fonts. No operating system is perfect, and despite its advances, there's room for improvement in Jaguar.

Despite little glitches, Jaguar is rock solid. In the months I've been running various versions of OS X, my Mac has crashed only once. Zero times since upgrading to Jaguar. When an application crashes, which can happen from time to time, you can just restart it and keep on working. With MacOS 9 and earlier, a crashed application usually meant that you had to reboot the Mac.

My biggest issue with Jaguar is the price. The retail price is \$129, and although street prices are as low as

Jaguar includes special features for users who have difficulty seeing, hearing, typing, and using the mouse.

\$100, there are no free upgrades, there is no reduced price for those of us who are moving up from earlier editions of OS X. Apple wants you to pay full price to upgrade, take it or leave it — an attitude that is hard for some of OS X's early adopters to swallow. (There's no word from Apple whether the next ver-

sion, dubbed Panther and due to be released sometime in 2003, will have a similar upgrade policy.)

Kevin Savetz, editor of Computer Click, has been a technology journalist for a decade. His web site is

Should You Upgrade?

Should you upgrade your current Mac to Jaguar? If you're running an earlier version of OS X, the answer is yes. The gaggle of new features — quicker file searching, spring-loaded folders, improved mail, iChat, and so on — are worth it.

If you're still using OS 9 or earlier, the decision to upgrade isn't so cut-and-dried. If you are happy with the current state of affairs, I suggest leaving well enough alone. Upgrading the OS also means updating your applications and other time-consuming hassles. For now, at least, you have the luxury of choice. The next time you buy a new Mac, you won't.

On the other hand, if you're feeling frustrated by the limitations of Classic Mac OS (notably, it doesn't use Unix, and can't run spiffy OS X-only software like iCal and iPhoto and even programs that don't start with the letter i), I suggest upgrading. That is, if your computer has enough RAM. Officially, Jaguar will work on any iMac, iBook, PowerMac G3 or G4 with more than 128MB RAM. But I wouldn't want to use OS X on any machine with that little RAM — 256 MB is the realistic minimum for a speedy good time.

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How to organize and automate your e-mail

By Mariva H. Aviram

Imagine your desk covered with various papers. You've got purchase orders, invoices, invitations, greeting cards, personal letters, fun anecdotes or jokes to read in your spare time, and direct-mail advertisements that you never asked for and don't want. None of these papers are in any particular order, and, whenever the mail carrier comes, she drops a new load of random papers on top of what is already an intimidating pile of disorganized informational clutter.

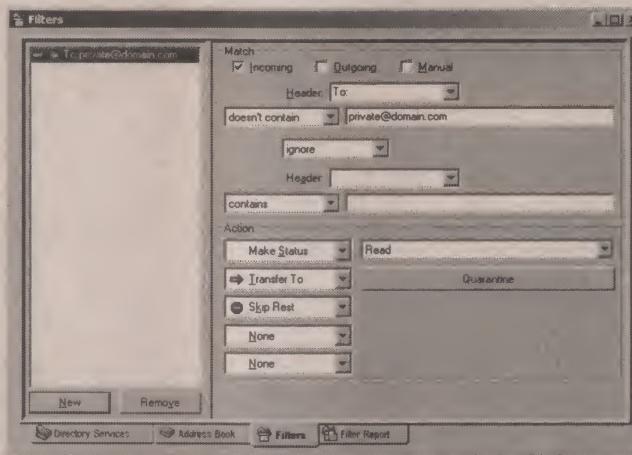
Now, imagine the same desk, neat and organized, with all the papers that you want and need filed away in folders that make sense to you, and the junk mail you don't want already dumped into a trash can before you even have to look at it. It's a much more relaxing vision, isn't it? With a little bit of know-how, you can apply this kind of powerful organization to not only tangible paper clutter, but to e-mail clutter as well.

E-mail messages are like the papers on your desk. Some are crucial, some are interesting but not that important, and others are completely unwanted and unnecessary. In any case, like papers, messages can easily be sorted into categories and filed away into folders. If you're serious about getting a handle on this particular medium, you can use filters and rules to manage your incoming e-mail.

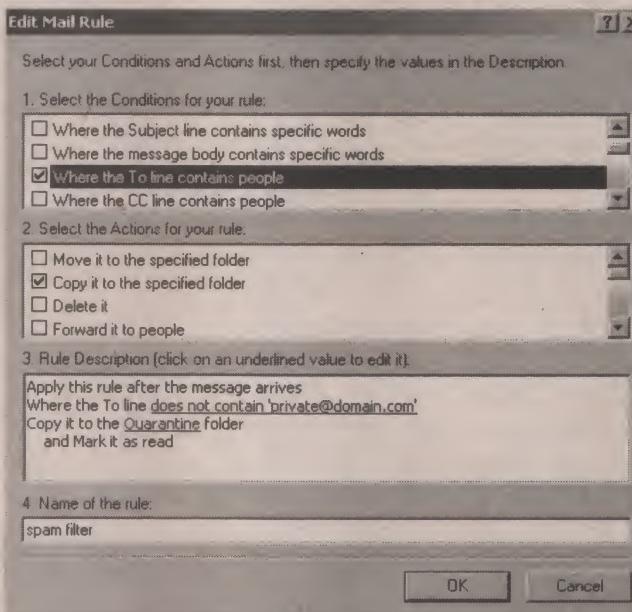
Rules and filters

A "rule" or "filter"—two different words for the same process—is a simple procedure that your e-mail application uses to first look for information in an incoming (or outgoing) message, and then do something with the message. Filters provide a powerful complement to the organizational scheme of your e-mail.

Say, for example, that you want all messages from your professional organization, before you even read them, to



Filters are easy to set up with Eudora's intuitive interface.



You can configure Microsoft Outlook Express rules with checkboxes and clickable hypertext links.

go directly to a mailbox called "Professional." Setting up this particular filter means that you must find something specific about messages from the organization, something that you wouldn't find in messages from anyone else. This proves easy if the messages all come from a particular domain name: simply create a filter that searches the "From" field of incoming messages for that domain name, and,

when found, automatically transfers the appropriate messages to the "Professional" mailbox.

It helps to know a little bit about how an e-mail message is put together. There are two parts to every message: the "headers," which include delivery information, like who sent the message, who the recipient is, the subject, and when it was sent; and the "body" — the text of the message itself.

The Rules Wizard
in Microsoft
Outlook walks you
through the
process of setting
up complex and
powerful rules.

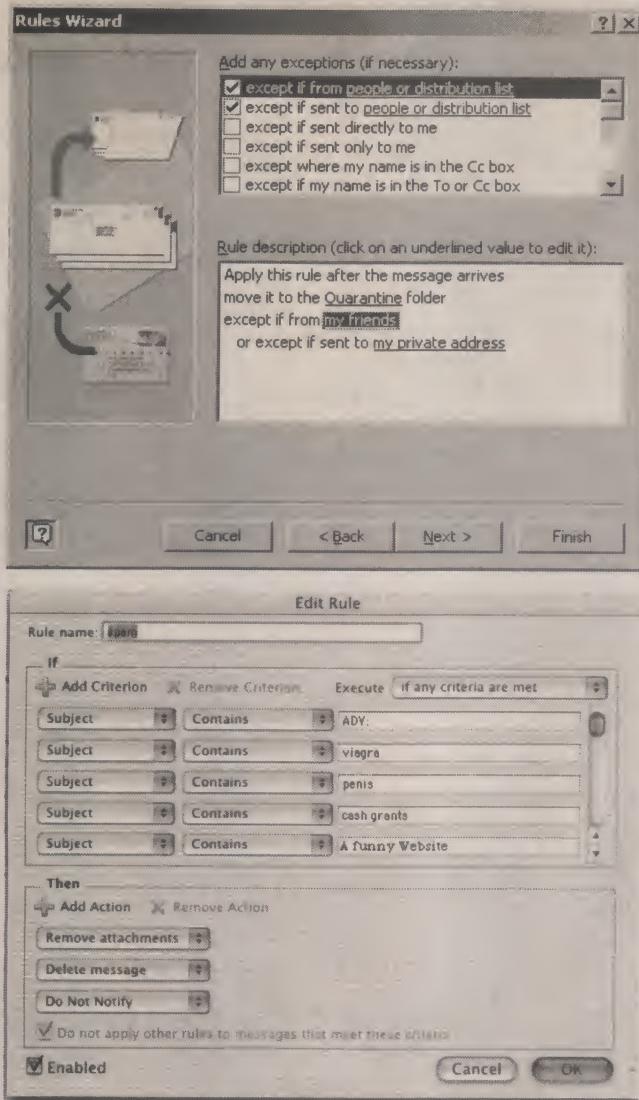
Filtering spam with Encourage. This take-no-prisoners filter throws away every message that contains junk-mail words.

There are many options for searching for text within a message. A filter can search any header of an e-mail message. There are many possible headers, but the ones you'll most likely want to filter are "From" and "Subject."

For instance: "If the From header contains '@myprofessionalorganization' then move the message to the Professional mailbox." Or, "if the subject begins with 'ADV:', move the message to the trash." (It's an advertisement.)

If you want to get fancy, you can use a conjoiner, such as "and" or "or" to filter based on more than one criterion. For example, "If the From header is mom@myparents.org or dad@myparents.org", mark the message urgent.

How the text is used in the search is also flexible. A filter can look for a header that is exactly the same as text



In addition to organizing your messages, you can use filters to clear out unsolicited commercial e-mail from your Inbox, even before you have to see the obnoxious or offensive subject lines.

that you specify, or text that is contained anywhere in the header, or text at the start or end of a header.

After the filter finds a message that meets your specified conditions, it takes an action—or a series of actions. The best filtering mechanisms allow you to chain one action after another in a series, so that you can do everything you need to with one filter, instead of having to set up multiple filters for each action. For example, a single filter should be able to search two different headers for different text, and then transfer matching messages to a special mailbox, mark it as a priority, label it a distinguishing color, send an automatic reply to the sender, forward it to someone else, and notify you with a special alert.

Setting up a rule or filter

Most e-mail applications offer the ability to filter messages. (Sorry, America Online users: AOL's built-in e-mail program doesn't include custom filters.)

While the interfaces for configuring filters vary, it's easy to set them up in whatever application you use. For instance, with Eudora, (www.eudora.com) access the filters configuration box by selecting "Filters" from the "Tools" menu. In this program, you can choose one or two conditions to look for in a message and up to five actions to take on it.

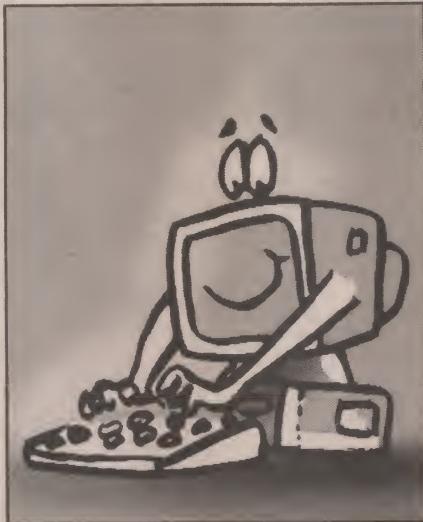
Besides Eudora, the most common e-mail applications are made by Microsoft. Outlook Express, which is free for users of Microsoft Windows and Mac OS, is an e-mail interface and address book. Its more robust sibling, Outlook (known as Entourage on the Mac OS platform), comes with the Microsoft Office suite. From both Outlook and Outlook Express, you can create and manage rules by selecting "Rules" from the "Tools" menu.

Filters and rules run in a series, one after another, so consider the order in which you stack them. If, for instance, you want all purchase orders from Amazon to be transferred to your "Purchase" folder and all messages containing the word "book" transferred to your "Book Club" folder, make sure the Amazon filter is located above the Book Club filter, so that it runs first. That way, Amazon purchase orders that contain the word "book" don't accidentally end up in the "Book Club" folder.

Redirect spam

In addition to organizing your messages, you can use filters to clear out unsolicited commercial e-mail from your Inbox, even before you have to see the obnoxious or offensive subject lines. This requires a bit of preparation before setting up your filters. First, establish more than one e-mail address, and make one of them "safe" by giving it only to trusted friends and associates. Then you're free to give out the other one(s) to the general public, such as for ordering merchandise online, filling out forms, or posting on web sites.

You may find that the majority of your filters involve this public address, such as in the case of a filter that transfers messages with "From" fields containing "@amazon.com" to a "Purchases" mailbox. After the filters involving your public e-mail address, at the very bottom of the filters list, you can add one final filter, which transfers all incoming messages that do *not* contain your private address to a temporary mailbox. What this does is manage each message on a case-by-case basis: if a message is not from someone you expect, like a store or organization with which you conduct business, or if it is



not directed to the secret e-mail address you've only given to trusted people, it's probably unsolicited and you therefore don't want to see it. The reason to transfer potentially unwanted messages to a temporary mailbox, instead of just deleting them, is in case a message is something you want to see but succumbs to an overzealous rule. Check the temporary mailbox, which you can call "Quarantine," "Spam," or "Pre-trash," on a regular basis, so that you

can delete what you don't want, which, if your series of filters works well, should be the vast majority of it.

Before you do any of this, though, check out the spam-filtering products that are already on the market. One such product, McAfee SpamKiller (www.mcafee.com/myapps/msk/), works with your e-mail application to automatically quarantine spam, import the e-mail addresses of your contacts to a "safe list," and filter multiple e-mail accounts. For Mac OS, try Spamfire (www.spamfire.com), an impressive shareware program.

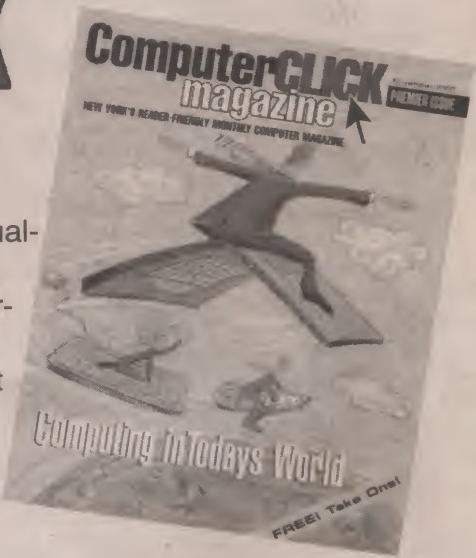
E-mail applications themselves are becoming more savvy about filtering out unsolicited e-mail, such as the Mail application that comes with Apple Mac OS X, which features a built-in junk mail filtering system.

Unfortunately, when it comes to spam, there are no fail-safe methods for getting rid of it altogether. But you can significantly reduce the amount of time you spend dealing with spam by using a spam-filtering software first and then implementing your own filters, too.

Mariva H. Aviram is a freelance writer who maintains mariva.com.

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Events

PhotoPlus Expo

(digital imaging & design) at Jacob Javits Convention Center October 31 through November 2, 10 AM-5 PM Cost: Expo registration \$35 after October 4 Contact: www.photoplusexpo.com

New York New Media Association (NYNMA) Technology Showcase: Real Business Solutions and Connections (panels, presentations, luncheon, exhibits) at Metropolitan Pavilion, 125 West 18th Street Thursday, November 07, 2002, 8:00 AM-8:00 PM Cost: day event: \$295-\$495, exhibits: \$30-\$65 Contact: 212-785-7898 or www.technologyshowcase.org

School of Visual Arts Open House: Advertising, Graphic Design, Photography at 209 East 23 Street Saturday, November 09, 2002 Contact: 212-592-2100 or www.schoolofvisualarts.edu

NYC Microsoft .NET Developers
Group presentation & meeting (Bill Grant presentation on Rational XDE Professional) at Microsoft, 825 8th Avenue (50th Street), Floor 18 Thursday, November 14, 2002, 6:00 PM Contact: www.nycaccessvb.com

Columbia Distinguished Lecture in Computer Science: "Optimization is Everywhere," Margaret Wright at Columbia University Interschool Lab, Schapiro CEPSR Building, 7th Floor Monday, November 18, 2002, 11:00 AM-12:15 PM Contact: 212-939-7023 or www.cs.columbia.edu/lectures/distinguished.html

NYPC Special Topic discussion: "Linux" at New Yorker Hotel, 481 8th Avenue (34th St.), Suite 1560 Monday, November 25, 2002, 6:30 PM Contact: 212-643-6972 or www.nypc.org

Metropolitan New York Macintosh (MetroMac) Alliance general meeting at New York University Main Building, 32 Waverly Place, Room 207 Thursday, December 12, 2002 Contact: www.metromac.org

NYC Microsoft .NET Developers Group: Intermediate Language and holiday pizza party at Microsoft, 825 8th Avenue (50th Street), Floor 19 Thursday, December 19, 2002, 6:00 PM Contact: www.nycaccessvb.com

FREE CLASSES

New York Public Library free computer classes Classes are held at various branches during the day and evening. Pre-registration is required. More information is available at www.nypl.org/branch/classes/instruct.html Advanced E-mail at Mid-Manhattan Branch, 455 Fifth Avenue November 22, 3-4:30 PM Contact: 212-340-0989

Basic Internet at Mid-Manhattan Branch, 455 Fifth Avenue November 5, 9:30-10:45 AM November 6, 3-4:30 PM November 12, 9:30-10:45 AM November 14, 3-4:30 PM November 26, 9:30-10:45 AM Contact: 212-340-0989

Basic Mouse Skills at Mid-Manhattan Branch, 455 Fifth Avenue November 5, 9:30-10:45 AM Contact: 212-340-0989

Computer Basics at Mid-Manhattan Branch, 455 Fifth Avenue November 8, 3-4 PM Contact: 212-340-0989

Connecting to the Internet at Mid-Manhattan Branch, 455 Fifth Avenue November 25, 3-4:30 PM Contact: 212-340-0989

E-mail for Beginners at Port Richmond Branch, 75 Bennett Street November 19, 6:30-7:30 PM Contact: 718-442-0158

Internet E-mail at Mid-Manhattan Branch, 455 Fifth Avenue November 19, 9:30-10:45 AM Contact: 212-340-0989

Internet Search Strategies at Mid-Manhattan Branch, 455 Fifth Avenue November 12, 9:30-10:45 AM November 13, 3-4:30 PM November 19, 9:30-10:45 AM November 26, 9:30-10:45 AM Contact: 212-340-0989

Introduction to Microsoft Word at 125th Street Branch, 224 East 125th Street November 4, 11 AM-12:30 PM November 18, 11 AM-12:30 PM November 25, 11 AM-12:30 PM December 2, 11 AM-12:30 PM December 9, 11 AM-12:30 PM December 16, 11 AM-12:30 PM Contact: 212-534-5050

Introduction to the Internet at 125th Street Branch, 224 East 125th Street November 1, 11 AM-12:30 PM November 8, 11 AM-12:30 PM November 15, 11 AM-12:30 PM November 22, 11 AM-12:30 PM December 6, 11 AM-12:30 PM December 13, 11 AM-12:30 PM December 20, 11 AM-12:30 PM Contact: 212-534-5050

Job and Career on the Internet at Mid-Manhattan Branch, 455 Fifth Avenue November 6, 10-11 AM November 13, 10-11 AM November 20, 10-11 AM November 27, 10-11 AM December 4, 10-11 AM December 11, 10-11 AM December 18, 10-11 AM Contact: 212-340-0989

On the Web: Parent and Child Together at Donnell Library Center, Central Children's Room, Second Floor, 20 West 53rd Street November 16, 2-3 PM December 7, 2-3 PM Contact: 212-621-0618

Sign-up for Free E-mail at 58th Street Training Center, 127 East 58th Street November 6, 6:30-7:30 PM Contact: 212-593-1761

Windows Basics at Mid-Manhattan Branch, 455 Fifth Avenue November 20, 3-4:30 PM Contact: 212-340-0989

Groups:

Association of Women in Computing
Cost: \$35 membership, \$25 for students
Contact: www.serve.com/awcnyc

Big Apple Users Group (BAUG)
(Apple II and vintage Mac users)
Contact: 212-606-2297 or
www.panix.com/~joreilly/baug.html or
eachan.dorsai.org/~baug

Creative Computing Club (open computer group for users of all levels) Meets: first Monday of the month at New York University. Contact: Doug Margolis: doug_margolis@nyacc.org, 212-888-3953 or www.nyacc.org/creativecomputing

Desktop Linux Users Group for Endusers (DeLUGE) Meets: first Wednesday of the month, 6:30-8 PM Contact: phantom21@mindspring.com or www.delugeny.org

Internet Society Meets: third Thursday of the month, 7-9 PM at New York University, 82 Washington Square East, Pless Hall, 5th floor conference room
Contact: Lucia Wright, president@isoc-ny.org or zope.isoc-ny.org/isoc-ny

LearningPatterns.com (Java and related classes) at 55 Broad Street, 18th Floor Contact: 212-487-9064 or www.learningpatterns.com

Linux User Groups of NY (LUNY)
Contact: www.luny.org Long Island PC Users Group (LIPCUG) Meets: second Friday of the month, 7:45 PM at Howitt School, Farmingdale NY Contact: Roy Linker, 516-546-7857 or info@lipcug.org or web.lipcug.org:81

Metropolitan New York Macintosh (MetroMac) Alliance

Meets: second Thursday of every other month at New York University Main Building, 32 Waverly Place, Room 207 Contact: www.metromac.org

New York Amateur Computer Club

Meets: second Thursday of the month, 7:00 PM at New York University Main Building, 32 Waverly Place, Room 806 Contact: 212-252-5252 or www.nyacc.org

New York Enterprise Windows User Group (discussion of Windows servers and workstations) Meets: third Thursday of the month, 6:30 PM at Microsoft, 825 8th Avenue Contact: Bill Zack, wzack@compuserve.com or 203-255-2979

New York Institute of Technology (NYIT) Center for Business Information Technologies (CBIT)
(classes and certification programs) at 17 West 60th Street, Floor 6 Contact: 212-261-1710 or iris.nyit.edu/~cbitweb

New York Linux Users Group (NYLUG) Meets: third Wednesday of the month, 6:30-8 PM at IBM Building, 9th Floor, 590 Madison Avenue (57th Street) Contact: rsvp@nylug.org or www.nylug.org

New York Perl (NY.pm) user group
Contact: ny.pm.org

New York Personal Computer User Group (NYPC) (nonprofit, class-

es, discussion groups) at New Yorker Hotel, 481 8th Avenue (34th St.), Suite 1560

Cost: membership: \$45 for one year, \$80 for two years, \$10 discount for full-time students Contact: 212-643-6972 or www.nypc.org

NYC Microsoft .NET Developers Group (Visual Basic, SQL server, ASP) at Microsoft, 825 8th Avenue (50th Street), Floor 19 Contact: www.nycaccessvb.com

NYCwireless (wireless info and meetings) Contact: www.nycwireless.net

School of Visual Arts (accredited university, offering continuing education classes in computer arts) at 209 East 23 Street Contact: 212-592-2000 or www.schoolofvisualarts.edu

Tri-County Personal Computer User Group Meets: second Tuesday of the month at Whitesboro High School Auditorium, Utica, NY Contact: Michael T. Gacek, president@tcpug.com or 315-732-0622 or www.tcpug.com

Unigroup of New York (Unix user group) Contact: unigroup@unigroup.org or www.unigroup.org

Visually Impaired Computer Users' Group (VICUG) Meets: second Tuesday of the month, 6:30-8 PM at Selis Manor, 135 West 23rd Street (6th/7th Avenues)
Contact: 212-714-4967 or www.hicom.net/~oedipus/vicug

Webgirls (for women in web technology) Contact: nyc@webgrrls.com or www.webgrrls.com/newyork_ny

World Wide Web Artists' Consortium Cost: \$50 membership, \$25 for students/seniors Contact: 212-427-5509 or www.wwwac.org

Know of a computer users group or upcoming tech-related event? E-mail editor@computerclickmagazine.com to

What is this Linux thing?

By Dave Taylor

Hi and welcome to the alternative lifestyle section of the magazine! Yes, if you're reading this column, I predict that you're interested in taking the big step and asking "what alternatives are there to the ubiquitous Microsoft Windows operating system for my computer?" You already know one popular alternative: the Macintosh. But maybe you're not ready for groovy curved inject-molded plastics and glowing icons with drop shadows, so you'd like to cast your proverbial net a bit further...

Enter Linux

If you've ever bumped into a Unix system, perhaps a few years ago when you were in college or when some crazy geek from the IT department insisted that command lines were the most efficient user interface, you're probably thinking that you're going to have to learn all sorts of weird and cryptic commands, and your mouse won't be worth even the tiny bits of cheese you feed it now. Perhaps you're savvy enough to know that many of the Web sites you visit each day are running Linux on their server boxes. Or maybe you've never heard of Unix or Linux at all.

So here's the good news: Linux (pronounced "lynn-icks") is a great alternative for desktop computing, and not only is the price hard to beat (free!) but the latest generation of Linux graphic user environments are truly wonderful to behold, with great office apps, a slick and professional work environment, much better security than Windows, and more.

If there's a dark shadow at all, it's that there are over 100 different distributions of Linux available, ranging from the polished Red Hat distribution to the genuinely odd (though interesting) distributions like Kevin's Red Hat Über Distribution, Elfstone, ScrudgeWare, and Bootable Business Card. Each



A popular alternative desktop: GNOME. I especially like the little footprint as the GNOME icon, personally.

"There are over 100 different distributions of Linux available, ranging from the polished to the genuinely odd."

serves a different market, and Linux has been ported to run on a remarkable range of hardware, including Intel-compatible systems, PowerPC, Alpha, SPARC, Itanium, and more.

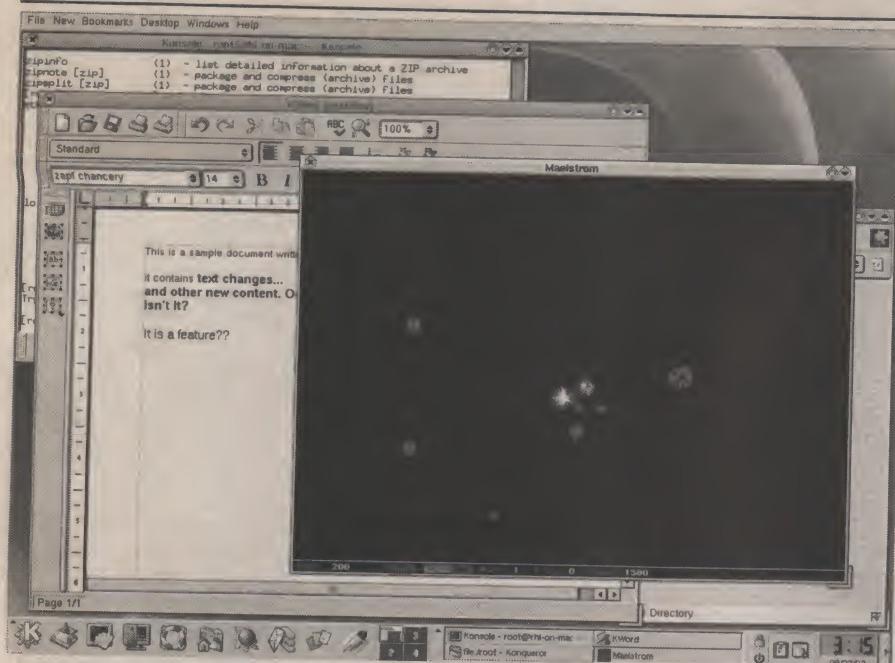
In The Beginning

The story of Linux starts with the story of Unix, which itself starts with an operating system called Multics, jointly developed in the mid-60's by GE, Bell Telephone Labs and MIT. It was a powerful and complex multi-user operating system for big computers, but the BTL folk were quickly disillusioned with the

project. Simultaneously, a few bright folk at Bell Labs decided to write their own multi-user, multiprocessing operating system, and they settled on Unix as its name (Unix is a pun on Multics, actually).

Unix grew quickly and became quite popular for its power and ease of programming, and became particularly popular at universities throughout the world. The problem was, Unix was aimed at expensive hardware and had all sorts of license restrictions.

Enter Linus Torvalds. In 1991 he decided he'd write his own freely distributed version of the Unix kernel for PC computers, based on an earlier free distribution called Minix, and called it Linux. The "freely distributed" is the important part of this concept, because others in the online community could then expand and enhance the program, with their modifications also being shared — we now refer to this as the



The K Desktop Environment, though oddly named, is quite easy to use, and there are tons of games. You can see I'm not doing very well in Maelstrom right now...

Open Source movement — and Linux grew in power and sophistication at a remarkable rate.

Today, the different distributions are all built around the same Linux kernel that Torvalds and his team continue to manage and develop, and it has increased in power and sophistication to where Linux distributions are available from almost all the big computer vendors, including IBM, HP and even Dell.

If you like reading books, Torvalds has written a very engaging history of the development of Linux called Just For Fun: The Story of an Accidental Revolutionary.

What Makes Distributions Different?

If all versions of Linux have the same core operating system (the kernel), what makes them all so different? Let's consider this a different way: what if you could buy your computer with all the applications you need already included? Would you buy the Microsoft version, that includes all the Microsoft applications? Or the StarOffice version, which includes its own suite of applications? Or Corel? Or ... etc.

In very much the same way, Linux

"Others in the online community could expand and enhance the program. Linux grew in power and sophistication at a remarkable rate."

distributions vary the icing on the cake, if you will, rather than the cake itself. Some distributions, for example, have excellent installation programs that help you fine-tune the system for your exact hardware configuration, so that you'll have maximal use of your keyboard function keys, your display, networking peripherals, modem, etc., without ever having to open a manual or read an online help screen. Others are focused very narrowly on security, and include special versions of common utilities that have been rewritten to ensure that it's almost impossible to break in and cause trouble.

Many distros, as we Linux folk call 'em, are aimed at servers rather than desktop machines, so they focus less attention on graphical interfaces and

nice icons, and more attention on performance and server applications like Apache, a very popular World Wide Web server package.

If you're like me, however, you're probably interested in a desktop version of Linux, a version that includes either Microsoft Office or equivalent programs, a version that can easily deal with the connection you have to the net, let you manage your e-mail, surf the web and focus on what you're trying to do, rather than how you're trying to do it.

And for that, many people opt for one of the two most popular Linux distributions: Red Hat Linux or Mandrake Linux. Both have extensive Web sites: www.redhat.com and www.mandrake.com. Both include a graphical window system and multiple desktop managers (imagine being able to boot into Mac's graphical environment or Windows XP on the same system and you'll get the idea of how cool multiple desktop managers really are!) and both are solid and reliable, from well-established companies.

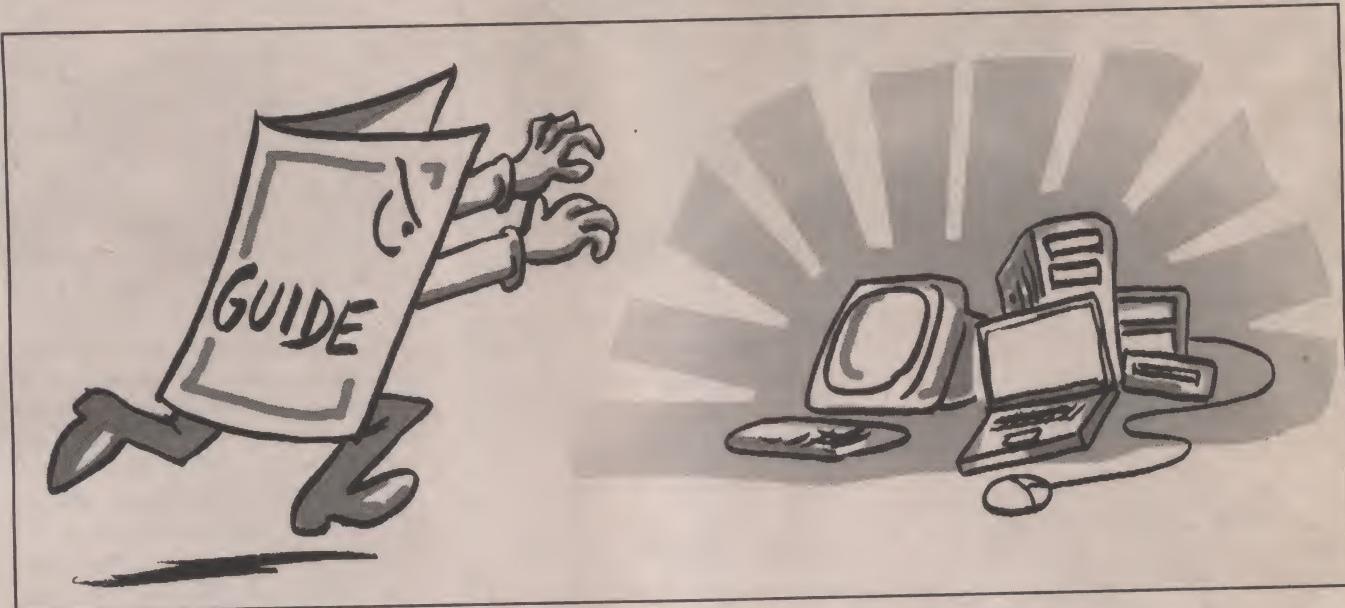
And both cost money if you want a box and some pre-printed CD-ROMs for installation.

Next issue, I'll talk about the pros and cons of buying a Linux distro versus downloading one for free. This time I'll end by suggesting you check out www.linux.org to start learning more about this great alternative computing environment.

Dave Taylor has been involved with Unix since 1980, and is the author of many books, including the best-selling Teach Yourself Unix in 24 Hours. He runs Red Hat and Mandrake at home, in addition to Mac OS X and Windows 2000 Pro. He can be reached at taylor@Computerclickmagazine.com or www.intuitive.com.

A Paranoid's Guide to Computer Ownership

By Daniel P. Dern



Trust no one" isn't just the motto of X-Files fans. It's also the mantra for anyone who relies on a computer.

Don't trust the hardware. Don't trust the operating system (or the company that makes it). Don't trust e-mail programs, or the e-mail you get even from friends and co-workers. Don't trust anti-virus programs. Don't trust the electric company. Don't trust web sites. Don't even trust other people who use your computer.

Why? Because computers, like cars, have things which can go wrong with them — and anybody or anything can be responsible, deliberately or inadvertently, for a problem that keeps you from being able to use your computer when you really, really need it.

It could be a part that goes bad, or a cyber-drive-by from a computer virus. Or lightning strikes —

or your cat/dog/roommate knocks your computer over. Next thing you know, your big presentation is scrambled, five months of records are deleted, or your computer has sent virus-laden e-mail to everybody in your address book.

Here are some things you can buy or do to prevent some problems, minimize the damage others will do, or make it easier to recover. All told, following the advice here may cost a couple hundred bucks you hadn't planned on spending, but I predict it will be cheaper than the alternative.

Remember, you're not just protecting your computer, any more than you're just taking care of your car: you're protecting your ability to get work done with the computer, and you're protecting the work you have done which resides on the computer's hard drive.

Step 1: Be Organized

Save your receipts and serial numbers. In a folder or notebook, put a copy of the original receipt, and write down the serial or registration numbers for the "big parts" (computer, monitor, printer),

as well as for your operating system and the software you buy (including downloads you pay for).

Keep this information someplace nearby where you can find it quickly and easily. If you ever call customer service, that's when you'll need it.

Save your software CDs/floppies. Buy or find a small case or box, and

use it to store the CD-ROMs and floppies that came with your computer and the programs that you install. This includes all the disks that come with your computer. Consider writing the software serial numbers on the paper sleeve for the CDs, to minimize frustration should you have to reinstall the software.

Step 2: Make "Rescue" and "Emergency" Disks

Your operating system, and some programs like Norton Utilities, include features for creating special floppy disks to use when you get into trouble. (Windows 2000 calls it the "Emergency Repair Disk" for example.)

Create and save these floppies — consider making more than one of each — label them, and put them in the box with your other important CD-ROMs. (You should probably try them before you put them away.) If one day your PC refuses to boot, you'll have a back door to get it running.

Step 3: Label Things

Computer stuff quickly gets out of hand; soon, you no longer know what goes with what.

If nothing else, label power adapters so you know what hardware they go

with. If you're really compulsive, label the end of each cable with what it comes from and goes to.

Put your name on anything you take out of the home/office — notebook, PDA, accessories.

Step 4: Protect Your Power with a UPS

An Uninterruptible Power Supply (UPS) makes sure your computer gets "safe" electricity. UPSs include a surge protector, which stops jolts of power that can damage the hardware. In addition, like the name says, they'll supply power (using a built-in battery) for a few minutes in case there's a power outage, or even just a brief "brown-out" where the voltage level dips. Usually, half the outlets on a UPS will supply back-up power; half only do surge-protection.

Even though you probably don't plan to keep working when the power goes out, you want a UPS so that your computer will keep going during a brief few-second power blip, e.g. when the air condition goes on. For longer out-

ages, you'll have time to save your work and do a normal shutdown.

You can get a good UPS for anywhere between \$60-\$150. I recommend one from either APC (www.apc.com) or Belkin (www.belkin.com). I like the Belkin Regulator Pro Gold series because they've got eight outlets — four for power back-up, four surge-protection only, versus the more typical three-and-three, and, more importantly, the outlets are positioned and spaced so that you can plug in several A/C adapters. (Computer, monitor, CD-writers and other data devices need to go in the "back up power" outlets; printers to the surge-only.)

If you've just got a notebook computer, you don't need a UPS, just a surge protector, near your desk.

You also need to protect your computer from surges on phone lines and/or network connections. Most UPSs and many surge protectors include this; notebook users should consider something like TeleAdapt's TeleTester Pro (www.teleadaptusa.com/nme/order_modemaccess.htm) or Road Warrior's ModemSaver. (www.globalroadwarrior.com/connect/problem9.html)

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Most UPSs and surge protectors include a warranty against damage to connected equipment. However, this won't cover your data — or the time and effort to replace things and get going again. So during thunderstorms or if you're not going to be using the computer for a while, consider unplugging all the power cords (and disconnecting the phone line or broadband connection from your modem).

Step 5: Use Anti-Virus and Firewall Software & Hardware

E-mail can be full of files that can do bad things to the information on your hard drive. So are some web sites. Plus there are far too many people on the Internet looking for unprotected logged-on computers to break into.

Start with an anti-virus program, such as Norton Anti-Virus (\$30-60). Install it as soon as possible after getting your computer set up. Then be sure to subscribe to the software's update service, so you're protected against new virus strains.

(And even then, don't open e-mail attachments you didn't expect, even from people you know!)

Next, get a "firewall" to block Internet intruders from your computer, and to keep "spyware" programs that may get installed on your computer from reporting home. I recommend Zone Alarm (www.zonealarm.com) — they've got a free version, or you can splurge forty bucks for their Pro version.

If you connect to the Internet via broadband, especially if you've got more than one computer, also consider getting a broadband firewall/gateway, such as from D-Link, LinkSys or NetGear, for \$50-\$250.

Step 6: Backup! Backup! Backup!

No matter how cautious you are, something may happen to your computer, temporarily or permanently. But if you have a current copy of your files, you can use another computer. If you have a copy of key configuration files — or your whole system — you may be able to restore your working environment without too much pain.

Learn how to back up all your data

easily. If possible, also how to save main configuration files (e.g., browser "bookmarks").

Good backup devices to choose from include:

- CD-R or CD-RW burner (Micro Solutions, Plextor, Teac, etc.) for \$150 to \$300.

- External hard drive — \$200 - \$400. Simple and reliable.

- "Internet backup" — probably only for broadband users.

Get in the habit of leaving a copy of your backup "off-site" — at a friend's house, safety deposit box, etc. — once a week.

**And even then,
don't open e-mail
attachments you
didn't expect, even
from people you
know!**

Step 7: Insure Your Hardware

Your homeowner's or office insurance policy should cover computers. Ask about a specific "computer rider" or even separate policy, which can provide better coverage.

Notebook/portable computer owners especially should consider computer-specific insurance which covers not only fire and theft but also problems which conventional homeowners/renters insurance won't, like hardware damage (dropping) and a wider range of theft circumstances. One well-known computer insurance is SafeWare. (www.safeware.com) Be sure to check whether coverage applies to where your computer will be — especially if the computer's going out of the country.

Be sure to save a copy of receipts — and possibly some photos — in a separate location such as a safety deposit box.

Step 8: Do These Chores Regularly

Here are some preventative maintenance tasks you should do on a regular basis. Some you should be able to have your computer schedule to do automatically, assuming you leave your system on most of the time.

- Regular backups. Do data backups daily if possible, weekly at minimum. And especially before installing any new software. (Do a full system backup first as well, if you can.) Be sure to check the backups to make sure they worked — e.g., see if you can find and view a file you've recently created.

- Periodic full scans for viruses.

- Periodic disk maintenance (such as Windows' scandisk). Warning, this can take a while, plan the first one for when you can leave the computer on but unused for several hours!

- Virus updates. This should be done daily — good virus software will do this automatically.

- Operating system and application updates.

Step 9: Consider Stocking Spare Parts

Keep an extra keyboard and mouse on hand — the one you use is likely to break, or get coffee spilled on it, at a critical time when the stores are closed or you don't have the time to go out and buy a replacement.

If you use a notebook computer, also consider:

- An extra A/C adapter, in case you lose or leave behind your main one while traveling.

- A second battery, for coping with long meetings, classes or plane trips.

- "Grip-it" strips, which make it harder for a notebook to slip out of your hands.

- A carrying case — preferably one that doesn't scream out "I've got a computer inside me!"

Step 10: Pay Attention

A lot of computer problems are due to PEBKAC — "Problem Exists Between Keyboard and Chair." Don't be too quick to click on things. Read error messages and alerts; when in doubt, take your fingers away from the keyboard and mouse and re-read what's on-screen. If you're still not sure what to do, call somebody.

And remember the classic advice, "If rebooting solves it, it wasn't a problem."

Daniel P. Dern (ddern@world.std.com) is a freelance technology writer. Most recently he was Executive Editor of Byte.com. His web site is www.dern.com.

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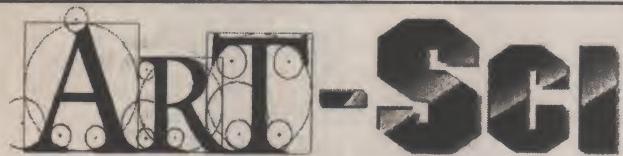
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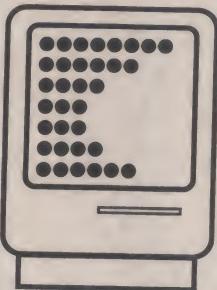
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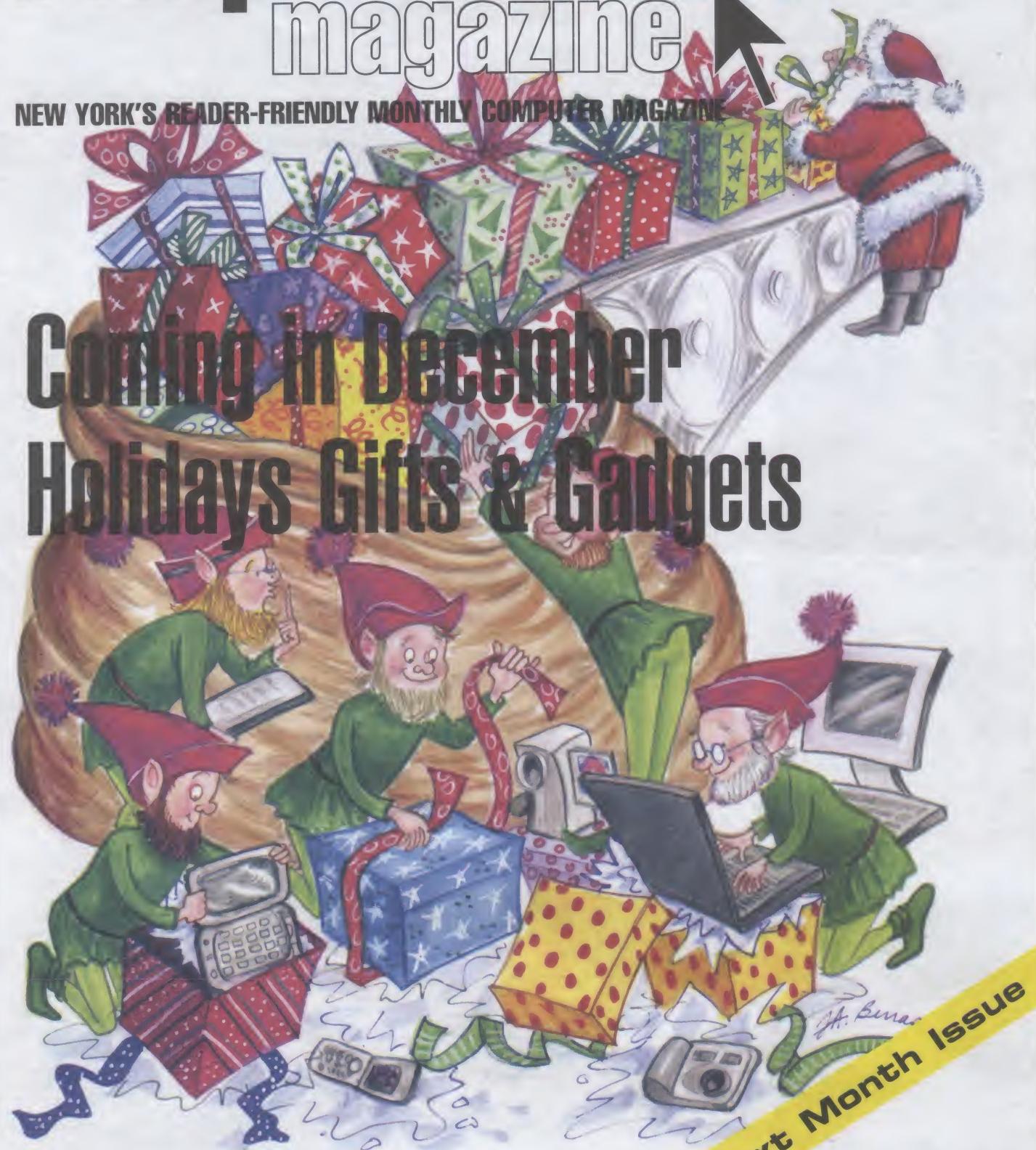
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